

AMENDMENTS TO THE CLAIMS

The following is a copy of Applicant's claims that identifies language being added with underlining ("____") and language being deleted with strikethrough ("—") or double brackets ("[[]]"), as is applicable:

1. (Currently amended) A method comprising the steps of:
receiving plural video streams corresponding to a first format and a second format
different than the first format;
encoding in parallel plural digitized pictures of a first picture sequence corresponding to
a first video stream of the plural received video streams and a second picture
sequence corresponding to a second video stream of the plural received video
streams to produce a transport stream comprising a multiplex of a corresponding
first compressed video stream and a second compressed video stream,
respectively, the first and second video streams having the first format and the
first and second compressed video streams having the second format;
storing the transport stream in a storage device;
determining whether the encoded pictures of the first and second compressed video
streams are to be transcoded according to a first operating mode or a second
operating mode relative to producing the video stream, the determination based
on availability of processing resources, wherein the first operating mode is
implemented in non-real time and the second operating mode is implemented in
real-time; and
transcoding at least a portion of the first compressed video stream or the second
compressed video stream according to either the first operating mode or the

second operating mode responsive to a determination regarding the sufficiency of processing resources.

2. (Original) The method of claim 1, wherein the method is implemented by a television set-top terminal.
- 3-4. (Cancelled)
5. (Previously presented) The method of claim 1, further comprising the steps of:
accessing pre-calculated resource estimates corresponding to compressing,
decompressing, or a combination of both tasks pertaining to transcoding
operations corresponding to the stored video stream, the pre-calculated resource
estimates based on worst case conditions for one or more factors,
wherein the transcoding according to the first operating mode is in non-real time and the
transcoding according to the second operating mode is in real time, the
determination of which mode to execute further based on the availability of
resources as determined with respect to the pre-calculated resources.
6. (Cancelled)
7. (Previously presented) The method of claim 5, wherein the one or more factors includes
one or more of video compression specification, picture size, picture rate, or time factor.
8. (Previously presented) The method of claim 7, wherein the time factor provides a
plurality of completion times for non-real time operations.

9. (Previously presented) The method of claim 1, wherein the transcoding according to the first operating mode is implemented according to a second video specification different than the first video specification.

10-11. (Cancelled)

12. (Previously presented) The method of claim 1, wherein the processing resources comprise one or more of an instruction execution resource, bus bandwidth, memory capacity, storage capacity, or access to storage capacity.

13-16. (Cancelled)

17. (Previously presented) The method of claim 1, wherein the transcoding according to the second operating mode is according to the first video specification.

18. (Previously presented) The method of claim 1, wherein the first operating mode corresponds to a first bit rate and the second operating mode corresponds to a second bit rate different than the first bit rate.

19. (Previously presented) The method of claim 1, further comprising the step of:
monitoring consumption of the processing resources over an extended time period for
different time intervals for respective operations that are currently executing and
scheduled to be executed at a future time.

20. (Cancelled)

21. (Previously presented) The method of claim 19, wherein the step of monitoring consumption of the processing resources comprises monitoring user input.
22. (Previously presented) The method of claim 1, wherein the determination is further based on one or more characteristics of the video stream.
23. (Previously presented) A set-top terminal (STT) comprising:
an encoder configured to compress plural digitized pictures of a picture sequence according to a first video compression specification to produce a video stream;
determine logic configured to determine whether the video stream is to be transcoded according to a first operating mode or a second operating mode relative to producing the video stream, the determination based on availability of processing resources; and
transcode logic configured to transcode the video stream according to either the first operating mode or the second operating mode responsive to a determination regarding the sufficiency of processing resources.
24. (Previously presented) The STT of claim 23, wherein the first operating mode corresponds to a higher compression rate than the second operating mode.
25. (Previously presented) The STT of claim 23, wherein the second operating mode corresponds to an MPEG-2 video compression specification and the first operating mode corresponds to an H.264 video compression specification.
- 26-40. (Cancelled)

41. (Previously presented) The STT of claim 23, wherein the STT is integrated in a subscriber television system.
42. (Previously presented) The STT of claim 23, wherein the first operating mode is implemented in non-real time and the second operating mode is implemented in real-time.
43. (Previously presented) The STT of claim 23, wherein the determine logic is further configured to:
- access pre-calculated resource estimates corresponding to compressing, decompressing, or a combination of both tasks pertaining to transcoding operations corresponding to the stored video stream, the pre-calculated resource estimates based on worst case conditions for one or more factors,
 - wherein the transcode logic is further configured to transcode according to the first operating mode in non-real time and according to the second operating mode in real time, the determination of which operating mode to execute further based on the availability of resources as determined with respect to the pre-calculated resources.
44. (Previously presented) The STT of claim 43, wherein the one or more factors includes one or more of video compression specification, picture size, picture rate, or time factor.
45. (Previously presented) The STT of claim 44, wherein the time factor provides a plurality of completion times for non-real time operations.

46. (Previously presented) The STT of claim 23, wherein the transcode logic is further configured to transcode according to the first operating mode implemented according to a second video specification different than the first video specification.

47. (Previously presented) The STT of claim 23, wherein the processing resources comprise one or more of an instruction execution resource, bus bandwidth, memory capacity, storage capacity, or access to storage capacity.

48-50. (Canceled).

51. (Previously presented) The STT of claim 23, wherein the second operating mode is according to the first video specification.

52. (Previously presented) The STT of claim 23, wherein the first operating mode corresponds to a first bit rate and the second operating mode corresponds to a second bit rate different than the first bit rate.

53. (Previously presented) The STT of claim 23, wherein the determine logic is further configured to:

monitor consumption of the processing resources over an extended time period for
different time intervals for respective operations that are currently executing and
scheduled to be executed at a future time.

54. (Previously presented) The STT of claim 53, wherein the monitoring comprises monitoring user input.

55. (Previously presented) The STT of claim 23, wherein the determination is further based on one or more characteristics of the video stream.

56. (Previously presented) The method of claim 1, wherein transcoding comprises accessing in parallel the first and second compressed video streams, decompressing in parallel the encoded pictures of the first and second compressed video streams, and compressing the first compressed video stream according to the second format at a reduced bit rate and compressing the second compressed video stream according to a third format different than the first and second formats.

57. (Previously presented) The method of claim 56, wherein the first format corresponds to analog video, and the second and third formats correspond to different video compression specifications.

58. (Previously presented) The method of claim 1, wherein transcoding comprises accessing the portion of the first compressed video stream, decompressing the portion, and compressing the decompressed portion according to a third format different than the first and second formats, and storing the transcoded portion having the third format in the storage device.

59. (Previously presented) The method of claim 58, further comprising accessing and decompressing the transcoded portion and non-transcoded portions of the first compressed video stream and presenting as decompressed pictures for display.

60. (Previously presented) The method of claim 58, wherein the first format corresponds to analog video, and the second and third formats correspond to different video compression specifications.

61. (Previously presented) The method of claim 1, wherein encoding further comprising encoding audio corresponding respectively to the first and second video streams and multiplexing the encoded audio in the transport stream.

62. (Previously presented) The STT of claim 23, further comprising a multiplexer, wherein the encoder is further configured to:

receive, in parallel to the plural digitized pictures, second plural digitized pictures of a second picture sequence and compressed pictures, the received pictures corresponding to a first format; and

further compress, in parallel to the plural digitized pictures of the picture sequence, the second plural digitized pictures of the second picture sequence to produce, in association with the multiplexer, a transport stream comprising a multiplex of the video stream and the compressed second plural digitized pictures, the transport stream pictures corresponding to a second format different than the first.

63. (Currently amended) The STT of claim ~~[[23]]~~ 62, wherein the transcode logic is further configured to access in parallel the video streams of the transport stream, decompress in parallel the compressed plural digitized pictures of the video stream and the compressed second plural digitized pictures, and compress the decompressed pictures of the video stream according to the second format at a reduced bit rate and compress the decompressed second plural digitized pictures according to a third format different than the first and second formats.

64. (Previously presented) The STT of claim 63, wherein the first format corresponds to analog video, and the second and third formats correspond to different video compression specifications.

65. (Currently amended) The STT of claim [[23]] 62, wherein the transcode logic is further configured to access a portion of the video stream, decompress the portion, compress the decompressed portion according to a fourth ~~third~~ format different than the first and second formats, and store the transcoded portion having the fourth ~~third~~ format in a storage device, the transcoded portion comprising the compressed, decompressed portion.

66. (Previously presented) The STT of claim 65, further comprising accessing and decompressing the transcoded portion and non-transcoded portions of the video stream and present as decompressed pictures for display.

67. (Currently amended) The STT of claim 65, wherein the first format corresponds to analog video, and the second and fourth ~~third~~ formats correspond to different video compression specifications.

68. (Currently amended) The STT of claim [[23]] 62, wherein the encoder is further configured to compress audio corresponding respectively to the video streams of the transport stream, and wherein the multiplexer is configured to multiplex the compressed audio in the transport stream.